

## CLAIMS:

1. A method of recording at a recording speed (V) an information signal on an information layer of a recording medium by irradiating the information layer by means of a radiation beam, said information layer having a phase reversibly changeable between a first state and a second state, which method comprises

- 5 - a write step for applying the radiation beam, in response to the information signal, to a first area of the information layer to cause the first area of the information layer to assume the first state, thereby forming a mark, and
- an erase step for applying a pulsed radiation beam to a second area of the information layer, before and after the mark, to cause the second area of the information layer
- 10 to assume a state substantially identical to the second state, the pulsed radiation beam comprising erase pulses having an erase power level ( $P_e$ ) and a bias power level ( $P_b$ ) between the erase pulses,
- characterized in that the bias power level ( $P_b$ ) depends on the recording speed.

15 2. A method as claimed in claim 1, characterized in that the first state is an amorphous state and the second state is a crystalline state.

3. A method as claimed in claim 1, characterized in that the bias power level ( $P_b$ ) increases in a range between zero and the erase power level ( $P_e$ ) as the recording speed (V)

20 increases.

4. A method as claimed in claim 1, characterized in that the bias power level ( $P_b$ ) increases in a range between zero and the erase power level ( $P_e$ ) as the recording speed (V) increases when the recording speed is below a chosen recording speed, and that the bias

25 power level ( $P_b$ ) is substantially identical to the erase power level ( $P_e$ ) when the recording speed exceeds the chosen recording speed.

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5. A method as claimed in claim 1 wherein the erase pulses have a duty cycle of  $T_e/T_b$ , where  $T_e$  is the duration of an erase pulse and  $T_b$  is the time between two successive erase pulses, characterized in that the duty cycle depends on the recording speed.

6. A method as claimed in claim 5, characterized in that the duty cycle increases in a range between nearly zero and unity as the recording speed (V) increases.

7. A recording device for recording at a recording speed (V) an information signal on an information layer of a recording medium by irradiating the information layer by means of a radiation beam, said information layer having a phase reversibly changeable between a first state and a second state, the device comprising a radiation source for providing the radiation beam and control means for controlling the power of the radiation beam such that

- in response to the information signal, the radiation beam is applied to a first area of the information layer to cause the first area of the information layer to assume the first state, thereby forming a mark, and such that
- a pulsed radiation beam comprising erase pulses having an erase power level ( $P_e$ ) and a bias power level ( $P_b$ ) between the erase pulses is applied to a second area of the information layer, before and after the mark, to cause the second area of the information layer to assume a state substantially identical to the second state,

characterized in that the control means set the bias power level ( $P_b$ ) in dependence on the recording speed (V).

8. A recording device as claimed in claim 7, characterized in that the control means set the bias power level ( $P_b$ ) so that it increases in a range between zero and the erase power level ( $P_e$ ) as the recording speed (V) increases.

9. A recording device as claimed in claim 7, characterized in that the control means set the bias power level ( $P_b$ ) so that it increases in a range between zero and the erase power level ( $P_e$ ) as the recording speed (V) increases when the recording speed is below a chosen recording speed and that the control means set the bias power level ( $P_b$ ) so as to be substantially identical to the erase power level ( $P_e$ ) when the recording speed is above the chosen recording speed.

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10. A recording device as claimed in claim 7, wherein the erase pulses have a duty cycle of  $T_e/T_b$ , where  $T_e$  is the duration of an erase pulse and  $T_b$  is the time between two successive erase pulses, characterized in that the control means set the duty cycle in dependence on the recording speed.

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11. A recording device as claimed in claim 10, characterized in that control means set the duty cycle so as to increase in a range between nearly zero and unity as the recording speed (V) increases.